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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/726,470	11/29/2000	Daniella I. Zheleva	CCI-014	1635

959 7590 12/31/2002

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EXAMINER
CHISM, BILLY D

ART UNIT	PAPER NUMBER
1654	

DATE MAILED: 12/31/2002 16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/726,470	Applicant(s) ZHELEVA ET AL.	
	Examiner B. Dell Chism	Art Unit 1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 December 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-54* is/are pending in the application.

4a) Of the above claim(s) *1-15 and 26-54* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

This Office Action is in response to Paper No. 15, filed 02 December 2002, wherein Applicants elected Group I, claims 1-34, and SEQ ID NO: 35 and the corresponding formula II (SEQ ID NO: 2), and this election is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Groups II, claims 35-47, and Group III, claims 48-54, are withdrawn from consideration as non-elected subject matter. Also, claims 1-15 and claims 26-34 are withdrawn from consideration as these claims are drawn to non-elected subject matter. Claims 16-25 were considered for examination.

Furthermore, the examiner removes the requirement of restriction to the specific SEQ ID NO: 35. Claims 16-25 are examined on the merits based on the elected general formula II (SEQ ID NO: 2).

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 16-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 16, 20 and 21 are rejected for the indefinite recitation of the term "any amino acid" wherein it is not clear whether "any amino acid" can be natural or non-natural amino acids.

Regarding claim 22, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claims 17-19 and 25 are rejected for depending from rejected claim 16 and claim 20 respectively, and claims 23-24 are rejected for depending from rejected claim 22.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 16-25 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a "written description" rejection, rather than an enablement rejection under 35 U.S.C. 112, first paragraph. Applicant is directed to the Guidelines for the Examination of Patent Applications Under the 35 U.S.C. 112, ¶ 1 "Written Description" Requirement, Federal Register, Vol. 66, No. 4, pages 1099-1111, Friday January 5, 2001.

Vas-Cath Inc. V. Mahurka, 19 USPQ2d 1111, states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention, for purposes of the "written description" inquiry, is *whatever is now claimed*" (see page 1117).

A review of the language of the claim indicates that these claims are drawn to a genus, i.e., any peptide of general formula II (SEQ ID NO: 2) and variants thereof.

A description of a genus may be achieved by means of a recitation of a representative number of species falling within the scope of the genus or of a recitation of structural features common to the members of the genus, which features constitute a substantial portion of the genus. *Regents of the University of California v. Eli Lilly & Co.*, 119 F3d 1559, 1569, 43 USPQ2d 1398, 1406 (Fed. Cir. 1997). In *Regents of the University of California v. Eli Lilly* (43 USPQ2d 1398-1412), the court held that a generic statement which defines a genus of nucleic acids by only their functional activity does not provide an adequate written description of the genus. The court indicated that, while applicants are not required to disclose every species encompassed by a genus, the description of the genus is achieved by the recitation of a representative number of species falling within the scope of the claimed genus. At section B(1), the court states "An adequate written description of a DNA ... requires a precise definition, such as by structure, formula, chemical name, or physical properties, not a mere wish or plan for obtaining the claimed chemical invention".

There are only a small portion of species of the claimed genus disclosed that are within the scope of the claimed genus, *i.e.* HAKRRLIF (SEQ ID NO: 35) and SEQ ID NOs: 36-170. The disclosure of a small representative group of species may provide an adequate written description of a genus when the group of species disclosed is representative of the genus. However, the present claims encompass massively numerous species that are not further described. There is substantial variability among the total possible species for this genus.

One of skill in the art would not recognize from the disclosure that the applicant was in possession of the genus of which comprises over 51 billion species. The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed" (see *Vas-Cath* at page 1116).

Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. 112 is severable from its enablement provision (see page 1115).

5. Claims 16, 20, 21 and 22 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for those peptides of general formula II disclosed on pages 29-33, does not reasonably provide enablement for the more than 51 billion other possible structures or compounds or variants. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

The first paragraph of 35 U.S.C. 112 states, "The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same...". The courts have interpreted this to mean that the specification must enable one skilled in the art to make and use the invention without undue experimentation. The courts have further interpreted undue experimentation as requiring "ingenuity beyond that to be expected of one of ordinary skill in the art" (Fields v. Conover, 170 USPQ 276 (CCPA 1971)) or requiring an extended period of experimentation in the absence of sufficient direction or guidance (In re Colianni, 195 USPQ 150 (CCPA 1977)). Additionally, the courts have determined that "... where a statement is, on its

face, contrary to generally accepted scientific principles", a rejection for failure to teach how to make and/or use is proper (In re Marzocchi, 169 USPQ 367 (CCPA 1971). Factors to be considered in determining whether a disclosure meets the enablement requirement of 35 U.S.C. 112, first paragraph, have been described in In re Colianni, 195 USPQ 150, 153 (CCPA 1977), have been clarified by the Board of Patent Appeals and Interferences in Ex parte Forman, 230 USPQ 546 (BPAI 1986), and are summarized in In re Wands (858 F2d 731, 737, 8 USPQ2d 1400, 1404 (Fed Cir. 1988). Among the factors are the nature of the invention, the state of the prior art, the predictability or lack thereof in the art, the amount of direction or guidance present, the presence or absence of working examples, the breadth of the claims, and the quantity of experimentation needed. The instant disclosure fails to meet the enablement requirement for the following reasons:

The nature of the invention and breadth of claims: The claimed invention is drawn to peptides of general formula II (SEQ ID NO: 2) to include natural and unnatural amino acid substitutions, deletions, and additions wherein the substitutions, deletions and or additions can be chemically modified natural and/or unnatural amino acids. The breadth of the claims is inclusive to more than 51 billion possible compounds and/or structures, and other than the sequences disclosed on pages 29-33, the present application is not enabled for the multitude of other possible combinations of natural and/or unnatural amino acid substitutions, deletions and additions with or without chemical modifications. The breadth of the claims includes variants, use of D-stereomer, chemical derivatives of the peptides, cyclic peptides derived from the peptides or fom the peptide derivatives, dual peptides, mulitmers of the peptides and any of said

peptides in the D-stereomer form, or the order of the final two residues at the C-terminal end are reversed.

The state of the prior art and the predictability or lack thereof in the art: Enablement must be provided by the specification unless it is well known in the art. *In re Buchner* 18 USPQ 2d 1331 (Fed. Cir. 1991). The art teaches that SEQ ID NO: 36 is a p21 WAF1 peptide and that it is a part of the cell phase machinery (see, Database PIR_73, AC S39358, 25 February 1994). AC S39358 (same as present SEQ ID NO: 36) teaches a peptide of general formula II (SEQ ID NO: 2) with p21 activity, however, neither AC S39358 nor the prior art teaches the predictability or functionality of the more than 51 billion possible compounds and/or structures that are of the general formula II (SEQ ID NO:2).

The amount of direction or guidance present and the presence or absence of working examples: Given the teachings found in the art that a peptide of general formula II (SEQ ID NO: 2) has p21 activity (SEQ ID NO: 36) and the fact that there are no other indications of the efficacy or predictability of the more than 51 billion possible compounds and/or structures other than those disclosed in the specification, and in the absence of working examples that confirm that any peptide of general formula II (SEQ ID NO: 2) has p21 activity, the specification is without enablement insofar as that it would require undue experimentation to confirm that 51 billion possible combinations and/or structures of general formula II maintain p21 activity.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

For purposes of the present rejection, claims 16-25, drawn to a peptide of formula II SEQ ID NO: 2, have been interpreted as equivalent to a peptide comprising the amino acid sequence of SEQ ID NO: 2.

7. Claims 16-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Database PIR_73, AC S39358, 25 February 1994, and anticipated by Database Swiss Prot_40, AC P38936, 15 December 1995. Each sequence, S39358 and P38936 teach the sequence HSKRRLIF (SEQ ID NO: 36) of present application and which is a peptide of the general formula II (SEQ ID NO: 2). Thus, each sequence, S39358 and P38936, anticipates the present claims 16-25.

Conclusions

No claims are allowed.

The following is a listing of relavent art that was not relied upon or utilized to make repeated rejections, however, the examiner wishes the art to be made of record:

a. Database SPTREMBL_21, ac q14010, 01 November 1996;

b. Database PIR_73, AC I54380, 02 July 1996; and

c. Database SwissProt_40, AC O19002, 15 December 1998.

Each of the above references teach a peptide of general formula II (SEQ ID NO: 2).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to B. Dell Chism whose telephone number is 703-306-5815. The examiner can normally be reached on 7:30 AM - 4:30 PM, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brenda Brumback can be reached on 703-306-3220. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4242 for regular communications and 703-308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1235.

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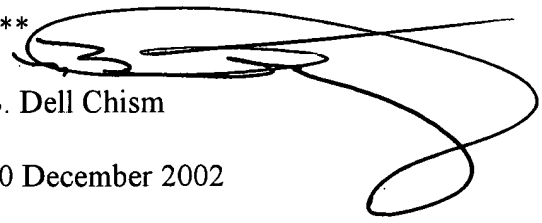
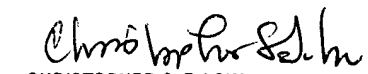


B. Dell Chism

30 December 2002



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